



Paving the Way for STEM in History Museums

TEXAS
HISTORICAL
COMMISSION
REAL PLACES TELLING REAL STORIES

BEYOND
THE
TxDOT ROAD

BULLOCK
TEXAS
STATE HISTORY
MUSEUM

Constructing a Narrative: Writing about STEM for a Specific Audience

Webinar Goals

- Learn practices in writing for accessibility, readability, and voice.
- Explore how to use these strategies in onsite and online applications to incorporate STEM topics into history exhibits.
- Practice different methods for clear and concise writing for your institution's primary audience using road construction as an example.

Overview

- Audience
- Accessibility
- Readability
- Voice

Audience

- How do you determine your primary audience?
- What if you have more than one?
- What can you learn about them and how can you do that?



Audience

- Will your exhibitions look different because of this primary audience?
- What choices will you make about your writing style because of who they are?

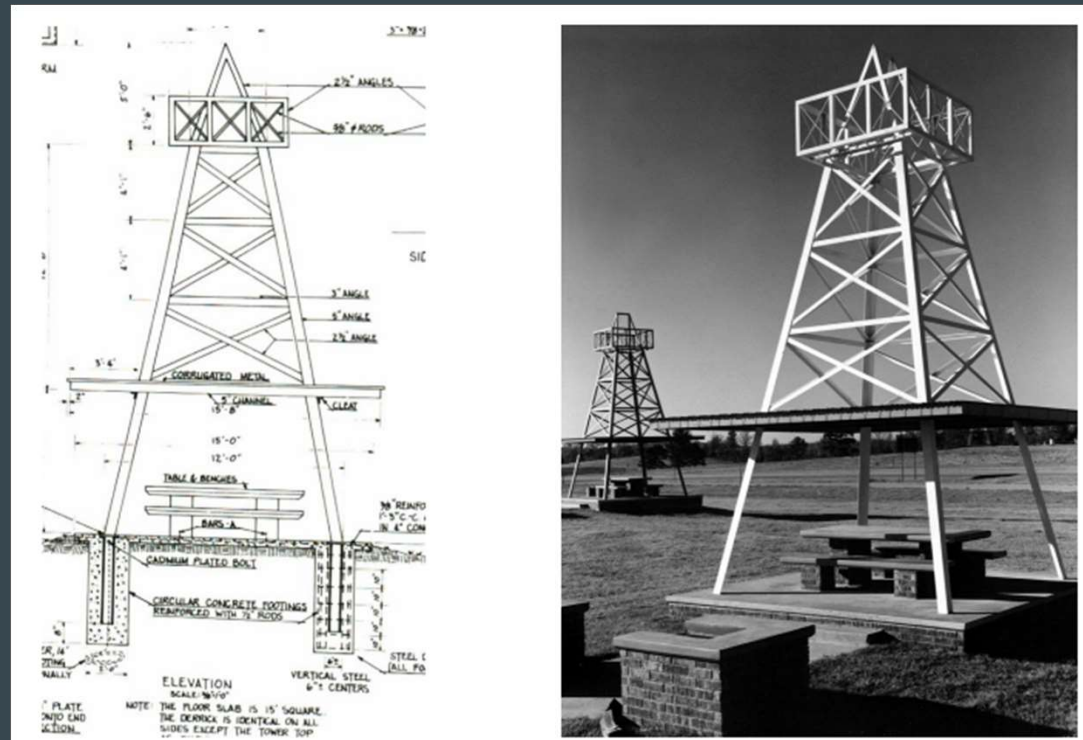


Accessibility

- Think of ADA compliance as only the beginning
- How does the physicality of your space impact the way that your audience reads your narrative?



Accessibility



Readability

How does the visual design help visitors to understand what is important?

What hierarchy of information are you creating?

CULTURAL CROSSROADS INTERSECCIÓN CULTURAL

Gone to Texas! It is a phrase that captures the extraordinary growth of Texas between 1845 and the Civil War. A new state with abundant and inexpensive land, the lure of Texas was irresistible for thousands of people. The state's first census in 1847 counted 142,000 Texas residents. By 1860, the population more than quadrupled. Texas's remarkable expansion resulted in a cultural crossroads as Tejanos, settlers from the United States and Europe, enslaved Africans, and American Indians (though not included in the census numbers) left a cultural legacy throughout the state.

¡Marchándonos a Texas! Es una frase que captura el extraordinario crecimiento de Texas entre 1845 y la Guerra Civil. El atractivo de Texas, un estado nuevo con tierras abundantes y baratas, fue irresistible para miles de personas. El primer censo estatal, en 1847, contó a 142,000 residentes en Texas. Para 1860, la población ya se había cuadruplicado. La impresionante expansión de Texas resultó en una intersección cultural establecida por Tejanos, pobladores de los Estados Unidos Y Europa, africanos esclavizados, indígenas americanos (aunque no estaban incluidos en los números de los censos) que dejó un legado a través de todo el estado.

Desegregated Shopping

Compras Desagregadas

Foley's Department Store in downtown Houston was the site of some of the first lunch counter sit-ins and desegregation protests in Texas. Bob Dundas, Foley's Senior Vice President, proactively responded to the protests by working with Black community leader Hobart Taylor and *Houston Chronicle* publisher John T. Jones on a plan to quietly integrate all 70 of Houston's lunch counters on the same day – August 25, 1960. They convinced local media not to report on it for one week, successfully avoiding the racial violence that had erupted in other Southern cities.

Foley's Department Store en el centro de Houston fue una de las primeras en tener Sentadas de Comedor y protestas en Texas. Bob Dundas, el Principal Vicepresidente de Foley's, respondió proactivamente a las protestas al trabajar con Hobart Taylor, el líder de la comunidad afroamericana y con John T. Jones, el editor del *Houston Chronicle*, para desarrollar un plan para discretamente integrar los 70 comedores de Houston en el mismo día - agosto 25 de 1960. Ellos convencieron a los medios locales para que no reportaran sobre eso por una semana, así exitosamente evitando la violencia racial que se desató en otras ciudades sureñas.

Map of Bell County

1879

Courtesy: Texas
General Land Office,
Archives and Records
Program, Austin

The land grants of the extended Reed family can all be seen on this map of Bell County in the map's lower middle quadrant (see map detail to the right). After receiving the initial grants, the Reed family continued to acquire land in the same general area.

Las concesiones de tierras de la extensa familia Reed pueden verse en este mapa del Bell County, en el cuadrante medio de abajo (véase el detalle del mapa a la derecha). Después de recibir las concesiones de tierras iniciales, la familia Reed continuó adquiriendo propiedades en la misma localidad en general.



Readability

The big black dog ferociously attacked and sank his teeth into the mailman and ran away with his delicious pastrami and egg sandwich.

54.8

The big black dog bit the mailman and stole his sandwich.

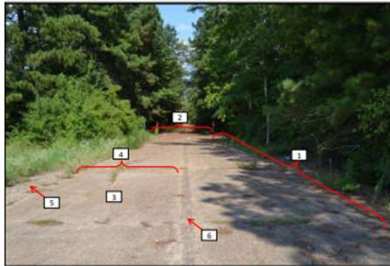

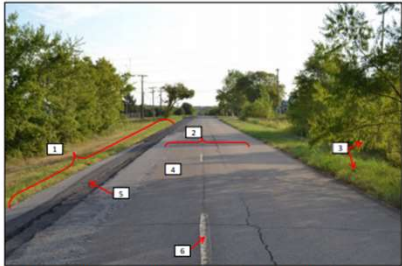
95.7

From “The Writer” online readability checker

Grade	Score	Reading age	Which is like
4	100+	9 to 10	This sign
5	90	10 to 11	Most comic books
6	80	11 to 12	<i>Harry Potter</i>
7	70	12 to 13	Large chunks of The Writer's website
8	65	13 to 14	Many of Obama's speeches
9	60	14 to 15	BBC news website
10	50	Start of college (high school)	<i>The Financial Times</i>
11	40	End of college	Most of William Shakespeare
12	30	University	<i>Harvard Law Review</i>

Readability

Table 22. Roadway Segment Subtypes by Time Period.


	County Roads and the Good Roads Movement: 1880–1916	Initiation of the Highway System: 1917–1932	Depression, Mobilization, and War: 1933–1944	Postwar Road Expansion: 1945–1956	Effects of the Interstate Highway System: 1957–1980
Roadway Segments		 <p>Roadway segment along Page Street, Redwater, Bowie County, constructed ca. 1920. Photo by HHM.</p> <p>Character-defining Features:</p> <ol style="list-style-type: none"> 1. Shortest and most feasible route used. 2. Road width approximately 22 feet. 3. Paving consisting of concrete slabs. 4. A high-crown surface is used for drainage and joints for expansion and contraction of roadway materials. 5. Relatively narrow shoulders constructed of stable materials (such as asphalt or gravel). 6. Striping consists of a black line down the middle of the roadway. 	 <p>Roadway segment along E. Avenue G, Penwell, Ector County, constructed ca. 1940. Photo by HHM.</p> <p>Character-defining Features:</p> <ol style="list-style-type: none"> 1. Shortest and most feasible route used. 2. Road width approximately 22 feet. 3. Standard right-of-way with fencing. 4. Paving consisting of bituminous concrete (later known as asphalt). 5. Shoulders constructed of stable materials (such as asphalt or gravel). 6. Striping consists of a black line down the middle of the roadway. 	 <p>Roadway segment along Oneal Street north of US 69, Vicinity of Greenville, Hunt County, constructed ca. 1946. This segment served as a spur providing a more direct route between downtown Greenville and US 69. Photo by HHM.</p> <p>Character-defining Features:</p> <ol style="list-style-type: none"> 1. Shortest and most feasible route used. 2. Road width approximately 23 feet. 3. Standard right-of-way with fencing. 4. Paving consisting of bituminous concrete (later known as asphalt). 5. Broad shoulders constructed of stable materials (such as asphalt or gravel). 6. Striping consists of a broken white line down the middle of the roadway. 	

Voice

- What if you are talking about the same topic across a variety of platforms?
- How can you ensure that you have a consistent voice in your exhibition text vs online content vs programming?
- What does a consistent voice even mean?

MAP SHOWING PROPOSED SYSTEM OF STATE HIGHWAYS IN 1917

Public works on an enormous scale



1 of 5: Map Showing Proposed System of State Highways in 1917.

In 1917, the newly appointed highway commission and state highway engineer proposed that an 8,865 mile network of state highways be built. At the time, none of the approximately 148,000 miles of road in Texas were paved.

Highway development got off to a difficult start as early corruption and the Great Depression slowed the initial growth of the highways. In its first 20 years, the highway department built 21,000 miles of main highways. After World War II, development took off in earnest with the farm-to-market and interstate highway systems. The demand for paved roads grew and the highway department responded, tripling the mileage of highways to 66,000 miles by 1967.

Today there are over 300,000 miles of roads in Texas.

Lender
Courtesy Texas State Library and Archives Commission, Austin

About
Books and Printed Material
Time Period: 1866 - 1936

Display Status
This artifact is not on view.

Voice

This Good Roads Amendment, which was actively supported by Governor Coke Stevenson, the Texas Good Roads Association, and other road organizations, prevented road funds from being redirected to other governmental agencies.²⁷⁴ Three-quarters of these revenues were reserved for highway construction, maintenance, and administration of highway laws, while the remaining one-quarter was allocated to the Available School Fund (money set aside by the state from current or annual revenues to support the public school system).²⁷⁵

In 1947, further legislation was enacted that changed the 1941 bond assumption law so that any surplus over \$2 million in the county and district road indebtedness fund would be allocated to the state highway fund. Moreover, the legislature enabled local and county governmental units to contribute funds to the THD, if they chose, in order to accelerate road construction during the postwar period.²⁷⁶ This commission policy was commonly referred to as the 75-25 program, outlined in Minute Order 23476 and passed by the legislature on June 2, 1947. This program accepted funds from counties for 75 percent of the construction cost for FM roads, up to a maximum of \$100,000 per year. The state then provided the remaining 25 percent of the costs. Under the 75-25 program, 2,788 miles of FM roads were constructed in 93 counties at a cost of approximately \$32.5 million. The 75-25 program proved to be a short-term solution for new road construction. It was discontinued in 1949 with passage of the Colson-Briscoe Act.²⁷⁷

With available funds, Texas was in a good position to act quickly in their postwar building efforts, while other states in the country found it difficult to raise the matching funds required by the Federal-Aid Highway Acts. By mid-1947 Texas accounted for one-quarter of all highway work under contract in the country, due in part to its head start in planning and reserve of available funds.²⁷⁸

By 1948, revenue from the gasoline sales tax and enforcement of license fees had reached its highest point in department history, and it was estimated that there would be enough funds to match federal aid and a small amount left for the betterment of roads with 100 percent state funds.²⁷⁹ Annual spending on Texas roads and bridges continued to rise during the postwar period, equaling more than \$100 million in 1952, topping \$200 million beginning in 1957, and exceeding \$300 million after 1963. In addition to the funding mechanisms described above, a portion of funding for roads was also generated through vehicle registrations. The state's vehicle registrations nearly doubled in the years after the war, providing increased transportation funds. In 1945, 1.7 million vehicles were registered, a total that increased to 3.1 million in 1950.²⁸⁰

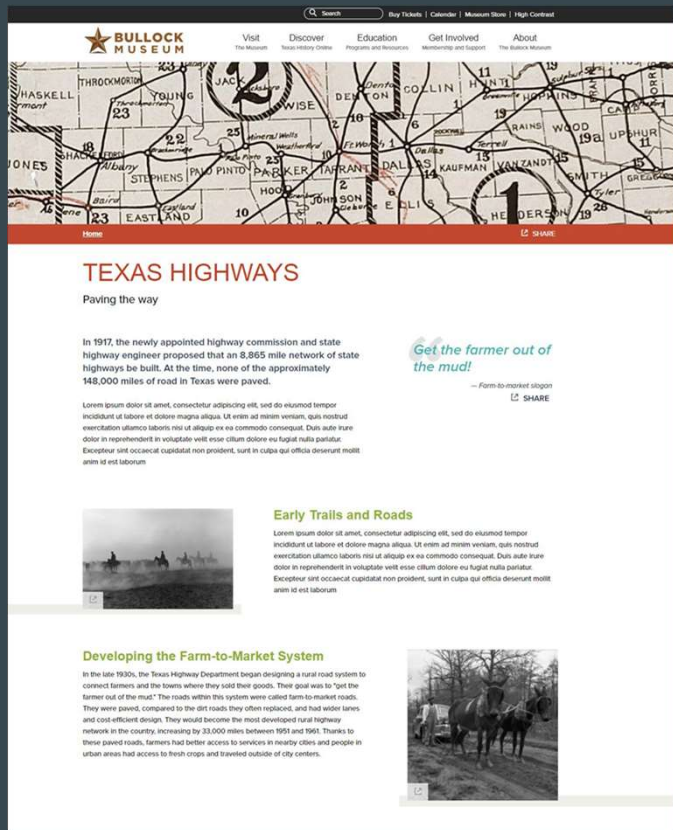
Voice (in exhibition text)

Imagine you are a farmer with a cotton crop ready for market. It has been raining for two weeks, and the only road between you and town is a soupy mess. That often was the reality for Texas farmers before 1949.

In the late 1930s, the Texas Highway Department started paving the dirt roads between farms and the towns where they sold their goods. In 1949, the state government set aside \$15 million a year to construct roads that would “get the farmer out of the mud.” By 1957, the farm-to-market (FM) road system was 30,000 miles long. Today, farm-to-market roads account for over half of the Texas highway system.



Voice (on website, broad)

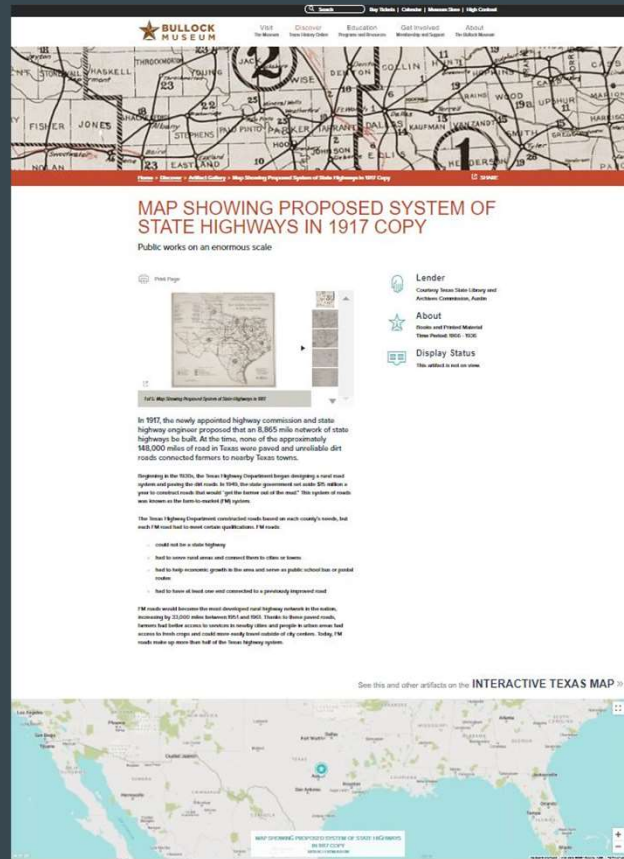


Developing the Farm-to-Market System

In the late 1930s, the Texas Highway Department began designing a rural road system to connect farmers and the towns where they sold their goods. Their goal was to "get the farmer out of the mud." The roads within this system were called farm-to-market roads. They were paved, compared to the dirt roads they often replaced, and had wider lanes and cost-efficient design. They would become the most developed rural highway network in the country, increasing by 33,000 miles between 1951 and 1961. Thanks to these paved roads, farmers had better access to services in nearby cities and people in urban areas had access to fresh crops and traveled outside of city centers.



Voice (on website, specific)



In 1917, the newly appointed highway commission and state highway engineer proposed that an 8,865 mile network of state highways be built. At the time, none of the approximately 148,000 miles of road in Texas were paved and unreliable dirt roads connected farmers to nearby Texas towns.

Beginning in the 1930s, the Texas Highway Department began designing a rural road system and paving the dirt roads. In 1949, the state government set aside \$15 million a year to construct roads that would "get the farmer out of the mud." This system of roads was known as the farm-to-market (FM) system.

The Texas Highway Department constructed roads based on each county's needs, but each FM road had to meet certain qualifications. FM roads:

- could not be a state highway
- had to serve rural areas and connect them to cities or towns
- had to help economic growth in the area and serve as public school bus or postal routes
- had to have at least one end connected to a previously improved road

FM roads would become the most developed rural highway network in the nation, increasing by 33,000 miles between 1951 and 1961. Thanks to these paved roads, farmers had better access to services in nearby cities and people in urban areas had access to fresh crops and could more easily travel outside of city centers. Today, FM roads make up more than half of the Texas highway system.

Voice (in social media posts)



Bullock Texas State History Museum

Public

DID YOU KNOW? Farm-to-market roads were created to do exactly what their name implies|

More reliable, paved roads allowed farmers and ranchers across the state of Texas to get their goods to market when they needed to. The system which began in the 1940s continues to be fueled by state funds including a one penny tax on every gallon of gas purchased in the state.



DYK [#farmtomarket](#) roads make up more than half of the Texas highway system? Learn more about this uniquely Texan phenomenon >> |



Join Us for An Activity!

Using physical materials that TxDOT has loaned to the Bullock Museum to represent layers of road construction materials, we'll work together to create one 65-word label for our imagined audience.

Thursday, June 10 at 2pm or Friday, June 11 at 10am

Tell Us About Your Own Work!

Bring your institution's STEM-based project in any stage of development and we'll workshop it with colleagues across the state.

Thursday, July 29 at 2pm or Friday, July 30 at 10am

